IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	
R. BRUCE WALLACE	:	
Serial No. 07/996,771	:	Group Art Unit 1807
Filed: December 24, 1992	:	Examiner: S. Chambers
FOR: LIGATION AMPLIFICATION OF NUCLEIC ACID SEQUENCES	:	

RESPONSE TO ACTION MAILED JULY 12, 1993

Honorable Commissioner of
Patents and Trademarks
Washington, D. C. 20231

Sir:

Cancel claims 2, 3, 4, 10, 18, 31-35, 37-39, 44 and 45.

Claim 1, lines 1-2, delete "a method for distinguishing between two known single nucleotide variants"; line 3, delete "sequence".

Add the following new claims 48, 49 and 50:

--48. An assay for a biologically derived DNA or RNA test substance, which has a known normal nucleotide sequence and a known possible mutation at at least one target nucleotide position in said sequence, which assay determines whether the test substance has said normal nucleotide sequence or said possible mutation, said assay comprising the steps of

(a) annealing a target oligonucleotide probe of predetermined sequence to a first sequence of said test substance so that said target nucleotide position is aligned with a nucleotide in an end region of said target probe,

(b) annealing an adjacent oligonucleotide probe of predetermined sequence to a second sequence of said test substance contiguous to said first sequence, so that the terminal nucleotide in said end region of said target probe and one end of said adjacent probe are directly adjacent to each other,

(c) contacting said annealed target probe and adjacent probe with a ligase under conditions such that the directly adjacent ends of said probes ligate to form a linked probe product unless there is nucleotide base pair mismatching between said target probe and said test substance at the target nucleotide position,

(d) separating said test substance and linked probe product, if formed, and

(e) detecting whether or not said probe product is formed as an indication of nucleotide base pair matching or mismatching at said target nucleotide position.

49. The assay of claim 48 wherein said test substance comprises DNA sequences derived from genomic DNA.

50. The assay of claim 49 wherein said DNA sequences include sequences encoding all or part of normal β-globin or sickle β-globin gene.--

REMARKS

Rejection of Claims 1-4 Under 35 U.S.C. §112, Second Paragraph

Claims 1 to 4 have been amended to avoid this rejection.